

REMARKS

Claims in the case are 5 and 7-11, upon entry of this amendment. Claim 5 has been amended, Claims 7-11 have been added, and Claims 1 and 3 have been cancelled herein.

Claim 5 has been amended to change its dependency from cancelled Claim 1 to added Claim 7. In addition, the term "thermoplastic" has been inserted into Claim 5 for purposes of improved uniformity with regard to added Claim 7.

Basis for added Claim 7 is found in Claim 1, and at page 7, lines 3-13, and at page 8, lines 13-27 of the specification. Basis for the preheating recitations in added Claim 7 are found at page 6, line 28 through page 7, line 2 of the specification. Basis for added Claim 8 is found at page 7, lines 12-13, and at page 8, lines 13-27 of the specification. Basis for added Claim 9 is found at page 6, lines 1-27 of the specification. Basis for added Claims 10 and 11 is found at page 7, lines 17-19 of the specification.

Applicants note with appreciation the withdrawal of the finality of the previous Office Action of March 18, 2003.

Claims 3 and 6 stand rejected under 35 U.S.C. §112, second paragraph. This rejection is respectfully traversed with regard to the amendments herein and the following remarks.

Claims 3 and 6 have each been cancelled herein, and the subject matter thereof has been incorporated into added Claim 7.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to particularly point out and distinctly claim the subject matter which they regard as their invention. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1, 3, 5 and 6 stand rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 3,901,852 (**Shah**) or International Publication No. WO 99/14252 (**Foss**). This rejection is respectfully traversed in light of the amendments herein and the following remarks.

Shah discloses the preparation of a thermoplastic polyurethane by means of a continuous one-shot procedure (column 4, lines 4-7). Shah does not disclose the process of Applicants' present claims, which is a continuous process in which a prepolymer is first formed in either a stirred tube reactor or at least one static mixer, followed by reaction of the prepolymer with 1,4-di-(2,2'-hydroxyethyl)-hydroquinone in an extruder.

Foss discloses a process of preparing an elastomeric polyurethane that involves formation of a prepolymer (e.g., from the reaction of methylenediphenyl isocyanate and polytetramethylene ether glycol) that is subsequently extended with an aromatic dihydroxy compound, such as hydroquinone bis(hydroxyethyl)ether (abstract; page 25, line 14 through page 26, line 27).

Foss discloses preparing the prepolymer and the chain extension of the prepolymer (to form the final elastomeric polyurethane) in the same stirred tank reactor (Figure 2, and page 29, line 15 through page 30, line 29). Foss also discloses preparation of the prepolymer in a stirred tank reactor, followed by extension of the prepolymer with hydroquinone bis(hydroxyethyl)ether in an extruder (Figure 3, and page 30, line 30 through page 32, line 21). Foss further discloses preparing the prepolymer and the chain extension of the prepolymer (to form the final elastomeric polyurethane) in the same extruder (Figure 4, and page 33, line 22 through page 34, line 26).

Foss does not disclose, teach or suggest the process of Applicants' present claims which includes the formation a prepolymer in either a stirred tube reactor or at least one static mixer, followed by chain extension of the prepolymer in an extruder with 1,4-di-(2,2'-hydroxyethyl)-hydroquinone.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to be unanticipated by and patentable over Shah or Foss. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 5 and 6 stand rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 5,959,059 (Vedula et al). This rejection is respectfully traversed with regard to the amendments herein and the following remarks.

Vedula et al disclose the preparation of a thermoplastic polyurethane by a one-shot method (abstract, and column 1, line 66 through column 2, line 5). Vedula et al do not disclose the preparation of a thermoplastic polyurethane by a continuous process which includes the formation of a prepolymer. In particular, Vedula et al do not disclose the preparation of a thermoplastic polyurethane by a process which involves the formation of a prepolymer in either a stirred tube reactor or at least one static mixer.

Applicants submit that the thermoplastic polyurethane elastomer prepared by their process has improved properties relative to thermoplastic polyurethane elastomers prepared by other processes. In particular, the thermoplastic polyurethane elastomer prepared by Applicants' process has improved homogeneity, mechanical properties, elastic properties and thermal stability relative to thermoplastic polyurethane elastomers prepared by other processes. See page 8, lines 1-7 of the specification.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to be unanticipated by and patentable over Vedula et al. Reconsideration and withdrawal of this rejection is respectfully requested.

Claims 1, 3, 5 and 6 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Vedula et al in view of Shah or Foss. In light of the amendments herein and the following remarks, this rejection is respectfully traversed.

Vedula et al, Shah and Foss have each been discussed previously herein. Vedula et al disclose the preparation of a thermoplastic polyurethane by a one-shot method (abstract, and column 1, line 66 through column 2, line 5). Shah discloses the preparation of a thermoplastic polyurethane by means of a continuous one-shot procedure (column 4, lines 4-7). Neither Vedula et al nor Shah disclose or suggest a process for preparing a thermoplastic polyurethane, that includes the step of first preparing a prepolymer. Vedula et al and Shah, either alone or in combination, do not disclose, teach or suggest the process of Applicants' present claims, which includes the step of preparing a prepolymer in either a stirred tube reactor or at least one static mixer.


Vedula et al disclose the preparation of a thermoplastic polyurethane by a one-shot method (abstract, and column 1, line 66 through column 2, line 5). Foss teaches away from the preparation of thermoplastic polyurethanes by means of a one-shot method (page 25, line 14 through page 26, line 8). As such neither Vedula et al nor Shah provide the requisite motivation that would lead one of ordinary skill in the art to combine or otherwise modify their disclosures. As the Court of Appeals for the Federal Circuit has stated, there are three possible sources for motivation to combine references in a manner that would render claims obvious. These are (1) the nature of the problem to be solved, (2) the teaching of the prior art, and (3) the knowledge of persons of ordinary skill in the art, *In re Rouffet*, 47 U.S.P.Q.2d 1453, 1458 (Fed. Cir. 1998). The nature of the problem to be solved and the knowledge of persons of ordinary skill in the art are not present here and have not been relied upon in the rejection. As for the teaching of the prior art, the above discussion has established that neither of the patents relied upon in the rejection provide the requisite teaching, and certainly do not provide the motivation or suggestion to combine that is required by Court decisions.

Even if Vedula et al and Foss were combined, Applicants' presently claimed process would not result therefrom. Vedula et al and Foss, either alone or in combination, do not disclose, teach or suggest the process of Applicants' present claims, which includes the step of preparing a prepolymer in either a stirred tube reactor or at least one static mixer.

In light of the amendments herein and the preceding remarks, Applicants' claims are deemed to be unobvious and patentable over Vedula et al in view of Shah or Foss. Reconsideration and withdrawal of this rejection is respectfully requested.

In light of the amendments herein and the preceding remarks, Applicants' presently pending claims are deemed to meet all the requirements of 35 U.S.C. §112, and to define an invention that is unanticipated, unobvious and hence, patentable. Reconsideration of the rejections and allowance of all of the presently pending claims is respectfully requested.

Respectfully submitted,

By 
James R. Franks
Agent for Applicants
Reg. No. 42,552

Bayer Polymers LLC
100 Bayer Road
Pittsburgh, Pennsylvania 15205-9741
(412) 777-3808
FACSIMILE PHONE NUMBER:
(412) 777-3902
lo/FRANKS/jrf049

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